ADVANCES IN MATHEMATICS 90, 114–116 (1991)

Book Reviews

M. BERGER, *Geometry I and II*, Springer-Verlag, 1987, 427 and 405 pp.

It is rare to find a book which one decides, on immediate inspection, to keep permanently on one's shelf, and this is one such book. A leisurely, courteous, thorough survey of ordinary geometry from whatever standpoint, advanced or elementary as the subject demands, had not been attemped since Schoute's treatise (also in two volumes) at the beginning of the century.

It has been said that no one any longer writes mathematics to be read with pleasure; this book is a counterexample to such a saying. If we only had treatises like this one on number theory, topology, algebra, differential equations, etc., then our fellow scientists might again begin to pay attention to mathematics.

I. MOERDIJK AND G. REYES (Eds.), *Models for Smooth Infinitesimal Analysis*, Springer-Verlag, 1991, 399 pp.

One always had the feeling that "technical" assumptions in differential geometry were really a way of paying lip service to the bullying demands of analytic rigor. At last, the language has been found where we can talk about differential geometry without being forced to consider Hölder conditions, degrees of differentiability, and other extraneous notions. The bad news, of course, is that we are being required instead to express ourselves in the language of categories and topoi. But it seems that this language is here to stay, more so, at any rate, than the ponderous apparatus of hard analysis that for years has been restraining the free flight of our geometric intuition.

R. CAMPBELL AND L. SOWDEN, *Paradoxes of Rationality and Cooperation*, The University of British Columbia Press, 1985, 366 pp.

G. J. SZÉKELY, *Paradoxa, klassische und neue Überraschungen aus Wahrscheinlichkeitsrechnung und mathematischer Statistik*, Académiai Kiadó, 240 pp.

Books on paradoxes of probability theory and of game theory are similar to mystery books. They have a specialized and faithful readership, and they follow a rigorous etiquette of presentation, like Greek tragedies. Publishers always find them a good investment, almost as good as cookbooks.

At first, it may appear surprising that there are so few of them, considering the extensive readership, but after a while one realizes that the possible tables of contents for books on paradoxes are severely limited in scope. It is hard to come up with a new paradox, even by falling prey to the sleaziest statistical "reasoning." But even a mix of old paradoxes, together with an occasional clever remark, will make good bedside reading, though not quite as good as Raymond Chandler.

R. L. BRYANT, S. S. CHERN, R. B. GARDNER, H. L. GOLDSCHMIDT, AND P. A. GRIFFITHS, *Exterior Differential Systems*, Springer-Verlag, 1991, 475 pp.

The neglect of exterior algebra is the major mathematical tragedy of the century, and only now is it being corrected. Who cannot marvel at the combined success of combinatorics, algebra, and analysis that is the theory of exterior differential systems (here properly explained

0001-8708/91 $7.50